PSYCHOLOGICAL CAPITAL AS MODERATOR OF ORGANIZATIONAL CHANGE DEMANDS ON NURSING STRESS

Abstract

Healthcare organizations in all OECD countries have continued to undergo change. These changes have been found to have a negative effect on work engagement of nursing staff. While the extent to which nursing staff dealt with these changes has been documented in the literature, little is known of how they utilized their personal resources to deal with the consequences of these changes. This study will address this gap by integrating the Job Demands-Resources theoretical perspective with Positive Psychology, in particular, psychological capital (PsyCap). PsyCap is operationalized as a source of personal resources. Data were collected from 401 nurses from Australia and analyses were undertaken using Partial Least Squares modelling and moderation analysis. Two types of changes on the nursing work were identified. There was an increase in changes to the work environment of nursing. These changes, included increasing administrative workload and the amount of work, resulted in more job demands and job resources. On the other hand, another type of changes relate to reduction to training and management support, which resulted in less job demands. Nurses with more job demands utilized more job resources to address these increasing demands. We found PsyCap to be a crucial source of personal resources that has a moderating effect on the negative effects of job demands and role stress. PsyCap and job resources were both critical in enhancing the work engagement of nurses, as they encountered changes to nursing work. These findings provided empirical support for a positive psychological perspective of understanding nursing engagement.

Change is now a significant and consistent feature of healthcare organizations around the world (Aiken, Sochalski & Lake, 1997; Newton, Teo, Pick, Yeung & Salamonson, 2013). In Australia the sector continues to undergo change at all levels. Examples of these changes include reshaping of work teams, empowerment programs, and new performance management systems (Newton et al., 2013). It has long been recognized that nurses experience high levels of stress arising from the demands of their day-to-day work from being required to deal with death and dying, handling difficult colleagues and patients, inadequate resources and lack of support, conflict with nursing and medical staff, increasing workload and uncertainty about new medical treatments (Gray-Toft & Anderson, 1981).

Existing research suggests that organizational reform in healthcare organizations can affect employees' attitudes at work. For example, it can have positive impacts on promotion and development but can also lead to changing employment and employment conditions that are likely to detrimentally affect health and wellbeing (Loretto, Platt & Popham, 2010). Others such as Newton et al. (2013) found than nurses adjust their attitudes according to the type of change initiatives being implemented. There is then a need to further investigate the association between stress and the job demands placed on nurses, how change influences these, and how nurses can deploy various resources to help them cope. Research has also shown that nurses work in increasingly complex, stressful, and challenging situations (Jackson, Firtko, & Edenborough, 2007). One of the models that can be used to understand the extent of nursing stress and engagement is the Job Demands-Resources Model (Bakker et al., 2004; Demerouti et al., 2001). This model incorporates various organizational and job related variables into the framework for understanding the predictors of nursing stress.

In addition to organizational and job related factors, it has been argued that the challenging environments of nursing could deplete a person's inner resources (Youssef & Luthans, 2007). Building personal reserves that assist nurses to cope, or even thrive, in

changing times is therefore paramount. This raises questions about understanding the impact of personal resources that assist nurses to cope with the work stresses and challenges they face.

In addressing these questions, we draw on research in Positive Psychology (PP) and Positive Organisational Behaviour (POB) in order to focus on employees' optimal functioning and positive experiences at work (Youssef & Luthans, 2007). PP and POB dissociate themselves from a disease model in which the focus is on an individual's weaknesses and the overcoming of ill-being and instead pay attention to the positive orientation humans have towards wellbeing. Drawing from research in POB and PP (Seligman & Csikszentmihalyi, 2000; Youssef & Luthans, 2007), PsyCap is an individual's positive psychological state of development and is characterized by self-efficacy; optimism; persevering toward goals and when necessary, redirecting paths to goals (hope); and bouncing back and even beyond from negative experiences (resilience) to attain success (Luthans, Youssef & Avolio, 2007). A recent meta-analytic review of by Avey, Reichard, Luthans, and Mhatre (2011) found positive PsyCap was significantly related to desired attitudes, behaviors, and performance.

In this paper we aim to examine stress and work engagement in times of change by integrating a particular dimension of personal resource, that is, psychological capital (PsyCap), into the Job Demands-Resources (JD-R) model. We will also examine if PsyCap buffers change-induced job demands on role stress as there has not been many studies which examines the buffering role played by an individual's PsyCap in stressful job context (Dewe, O'Driscoll, & Cooper, 2010). The format of the paper is as follows. First, the literature on organizational change and the JD-R will be reviewed. This is followed by the literature on PsyCap. The research design is then outlined, together with a description of the scales adopted. Findings of the study are then reported. Finally, theoretical and managerial

implications are discussed.

THEORETICAL BACKGROUND AND HYPOTHESES

Examples of change in healthcare organizations at the macro/sector-wide level include new funding models and new organizational-level arrangements (such as delayering and restructuring). These have created an environment of complexity and uncertainty for the health workforce (HealthWorkforce Australia, 2010) and can impact negatively on the nursing workforce, to the extent that work engagement and retention have become key challenges. This is similar to the issues faced by healthcare organizations in other countries (Fiabane, Giorgi, Sguazzin, & Argentero, 2013; Hayes et al., 2012; Loretto et al., 2010).

There is a good understanding about the causes, nature and the negative consequences of organizational change (see Oreg, Vakola, & Armenakis, 2011) and in particular, the negative consequences in nursing (see the review by Hayes et al., 2012). There is however, limited research which examines changes to nursing work and the resulting effects on employee attitudes. The same assessment could be made about research in the public management on the effects of change on employee attitudes (see Ritz & Fernandez, 2011). Most research tends to examine the impact of sector and organizational wide reforms on nursing stress (e.g., Kuokkanen et al., 2009; Lavoie-Tremblay et al., 2010; Teo et al., 2013). As noted by Loretto et al. (2010), most of the change management research tends to assume all employees will experience organizational change in a similar manner. Therefore, it is the intention of this study to focus on the types of changes in nursing work, the buffering role of personal resources, and how job changes and resources affect nursing attitudes.

Loretto et al. (2010) argue that the type and amount of change being implemented and its effects has been relatively neglected by researchers. Rafferty and Griffin (2006) contend that continued exposure to change is associated with change fatigue and reduced psychological wellbeing. While Loretto et al. (2010) note that change has both negative and

positive effects on the types and amount of organizational change initiatives being implemented in the health sector, scant empirical research has focussed on the positives and negatives of change in the health sector. Hence, it is crucial for better understanding of nursing work to examine this including the types and amount of change and their impact.

Job Demands-Resources Model and Nursing Work

According to Bakker and his colleagues, "the JD–R model is a heuristic, overarching model that may be applied to various occupational settings, irrespective of the particular demands and resources involved" (Llorens, Bakker, Schaufeli, & Salanova, 2006: 379). Influenced by Karasek's Job Demand-Control model, the JD-R model comprises two variables: job demands (JD) and job resources (JR). JD refers to the "physical, psychological, social or organisational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort and are therefore associated with certain physiological and/or psychological costs" (Bakker et al., 2004: 86). JD can exist in the form of high work pressure, role overload, and poor environmental conditions (Bakker et al., 2004).

According to Bakker et al. (2004), JR, the other component of the JD-R model, refers to the physical, psychological, social or organisational aspects of the job that assist in the completion of work. It has also been shown to reduce job demands and stimulate personal growth and development. JR can include factors such as work organisation, supervisor support, remuneration and career opportunities (Bakker et al., 2004). Personal resources (PR) are an important part of the JD-R model because they help to explain variance in exhaustion and work engagement (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Thus, job and personal resources are connected to how well employees cope with the stress arising from job demands and their level of engagement in the daily task of meeting these demands (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009). In the field of personal resources, psychological capital (PsyCap) has been identified as being indicated by self-efficacy, hope,

optimism and resilience (Luthens, Aviolo, Avey & Norman, 2007) and is important to the extent that it has been found to be connected to employee positive coping and wellbeing (Avey, Luthans, Smith, & Palmer, 2010), yet has not as yet been tested as a personal resource for nurses, and this overcomes this limitation.

Several studies have found the negative impact of organizational change initiatives on job stress in the nursing context. Teo et al. (2013) conclude that change is associated with an increase in non-nursing, administrative demands (JD), less job control (JR) and role stress. Role stress is created as JD increases without a compensating increase in JR. The concept of role stress is "rooted in the assumption that all individuals perform roles, where a role originates from the expectations about behavior for a position in a social structure" (Rizzo et al., 1970, cited by Örtqvist & Wincent, 2006: 399). Garrosa, Moreno-Jiménez, Liang, and González (2008) also found evidence where a combination of JD (e.g., workload, experience with pain and death, and conflictive interaction) and personal resources (PR) predict different degree of job strain in nursing. Consistent with the literature (see the meta-analytic review by Örtqvist & Wincent, 2006), recent studies (such as Chen, Chen, Tsai & Lo, 2007; Garrosa et al., 2008) found the negative impact of job characteristics (such as JD and JR) on role stress (such as role ambiguity) in nursing. Therefore, we hypothesize the following relationships:

H1. The types and amount of changes on nursing work are positively associated with the job demands of nurses.

H2. The types and amount of changes on nursing work are negatively associated with the job resources of nurses.

H3. Job demands are negatively associated with the job resources of nurses.

H4. Job demands are positively associated with the role stress of nurses.

Work Engagement and Nursing

There is a growing body of literature which suggests that work engagement is an

important attribute. Work engagement is 'a persistent, positive and satisfying state of mind, an affective-motivational state of work-related wellbeing, related to work that is not directed towards any particular event, object, or person' (Barbier et al., 2013, 750). Drawing on positive psychology, Schaufeli, Bakker, and Salanova (2006) argue that engaged employees are more energetic and effective in connecting with their work and are able to deal well with job demands. Similarly, engagement is associated with positive aspects of work in general and employee wellbeing in particular (Schaufeli et al., 2006) and can be explained using the JD-R model (Bakker & Demerouti, 2007). In applying the JD-R model to nursing, the job can be seen as having a particular set of physical and psychological job demands and job resources that help to achieve goals, manage job demands, and enable personal growth (Barbier et al., 2013). The level of work engagement is dependent on the balance that an employee can achieve between resources and demands because job resources are positively associated with work engagement while job demands are negatively associated to wellbeing (Bakker & Demerouti, 2007). Thus engaged employees are better able to cope with demands at work (Schaufeli et al., 2006). This is because there is a cyclical relationship between engagement and resources in that deployment of resources leads to enhanced work engagement and this in-turn leads to the establishing of more resources (Barbier et al., 2013). Furthermore, this virtuous cycle of resource creation and enhanced engagement also has potential for activating and conserving positive conditions, beliefs and affective states (Xanthopoulou et al., 2009).

According to Xanthopoulou et al. (2009: 235), employees who are engaged with their work tend to exhibit high levels of energy, are enthusiastic about their work and are fully immersed in their job. Research by Schaufeli et al. (2006) has shown that work engagement can be reliably measured. In the current study, work engagement is defined as "a positive affective/motivational reaction towards the job that is characterized by vigour, dedication,

and absorption …" (Xanthopoulou et al., 2009: 184). Bargagliotti's (2012) review identified several antecedents of the work engagement of nurses, such as positive and fulfilling state of mind, work that is characterized by vigour, dedication and absorption, trust (organizationally, managerially and collegially) and autonomy. These factors are similar to those in the demand aspect of the JD-R model while trust and autonomy are associated with resources. Fiabane et al. (2013) identified workload, an aspect of JD, to be the most significant predictor of work engagement. They also concluded that organisational and personal factors were both found to be significantly associated with work engagement. Hence we hypothesize that:

H5. Job demands have a direct and negative association with work engagement.

H6. Job resources are negatively associated with role stress.

H7. Job resources are positively associated with work engagement of nurses.

Positive Psychology and Psychological Capital (PsyCap)

In the present study, PsyCap is operationalized as personal resource. PsyCap refers to 'an individual's positive psychological state of development' characterized by: '(1) having confidence (efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success' (Luthans, Youssef, & Avolio, 2007: 3). These psychological attributes positively contribute to job satisfaction, commitment and intention to stay (Luthans, Youssef, & Avolio, 2007). Research on POB (Avey et al., 2011; Luthans, Youssef, & Avolio, 2007) has demonstrated that individuals who have high PsyCap will tend to view negative events more positively as they possess positive psychological attributes which buffer the negative aspects of the events.

Recent studies have noted that various aspects of PsyCap have a positive influence on how nurses and health care employees deal with their occupational stress. These studies examine self-efficacy and hope (Gillespie et al., 2007), and optimism (Luthens, Youssef & Avolio, 2007). Jackson et al. (2007) argue that personal resilience is an important psychological attribute as it allows nurses to adjust to the nursing stressors associated with their everyday work. Because these resources are somewhat open to development, they constitute psychological assets rather than liabilities (Avey, Luthans, & Jensen, 2009).

The importance and role of positive personal resources that aid employee coping and wellbeing has gained momentum (Xanthopoulou et al., 2009). Personal resources provided a sense of control, resilience and ability to impact on their work environment with success (Hobfoll, Johnson, Ennis, & Jackson, 2003). However, typically three aspects of personal resources (that is, self-efficacy, organizational-based self-esteem and optimism) are viewed as the fundamental components of personal resources from the JD-R perspective.

PsyCap as a personal resource has the added advantage of (not only) including optimism and efficacy (as tested in the JD-R model) but also adds the well-researched constructs of hope and resiliency, that combined form the higher order construct of PsyCap. Thus PsyCap offers greater insight and benefit, into the role and function of personal resources for nurses. Adding to the literature on this issue (e.g., Avey et al., 2011; Xanthopoulou et al., 2009) we suggest that the JD-R model has a limited range of personal resources if the entire PsyCap arsenal of personal resources is not included. We overcome this limitation (that has been raised theoretically) by empirically testing PsyCap as a personal resource for nurses.

As noted above, when employees are able to deploy PsyCap as a personal resource, they are more satisfied in their jobs and perform better (Avey et al., 2011). Employees with greater PsyCap demonstrate more support for, and are more open to, organizational change

(Avey, Wernsing, & Luthans, 2008), have higher organizational commitment, and less absenteeism (Avey, Patera, & West, 2006). PsyCap not only has a strong positive relationship with desirable attitudes and performance, but also psychological wellbeing of employees (Avey et al., 2010) and negative relationships with cynicism, stress and anxiety (Avey, Luthans, & Jensen, 2009), although research into the role of PsyCap in job stress – particularly job stress – in high emotional and high service orientated occupations such as nursing, remains sparse (Avey et al., 2009).

Additionally, PsyCap has a positive relationship with preferred employee attitudes including the psychological wellbeing of employees (Avey et al., 2010). It has been suggested that PsyCap may be a psychological resource that positively influences an employee's work engagement (Avey et al., 2011; Xanthopoulou et al., 2009). Building on work by Xanthopoulou et al. (2009) we extend PsyCap outcomes tested above to include work engagement. In support of this Avey et al. (2011) state that PsyCap in theory aids commitment to the organization. This is because the organization (as a referent) fulfills needs for efficacy and accomplishment for those high in PsyCap, who will be "…more likely to embed themselves and be enthusiastic about their work" (Avey et al., 2011: 132). Therefore, we propose the following hypotheses:

H8. Personal resources (that is, psychological capital attributes) are negatively associated with role stress.

H9. Personal resources (that is, psychological capital attributes) are positively associated with work engagement.

Bakker and colleagues suggest that employees with high levels of personal resources have greater mastery that helps them to deal more effectively with demanding conditions, and in turn protect them from negative outcomes. Under demanding work conditions, employees who hold high levels of resources dispose more supplies and are more capable of dealing

with these demands (Bakker et al., 2005). Equally we suggest that the personal resource of PsyCap will be positively related to job resources. Employees with greater PsyCap demonstrate greater perceptions of support in organizations, have higher commitment to the organisation, are more open to changes in organisations. PsyCap therefore becomes a personal resource that aids in positively seeking out further resources that in turn aid in achievement (Avey et al., 2008). Thus we propose that:

H10. Personal resources (that is, psychological capital attributes) are positively associated with job resources.

There is empirical support for the negative association between role stress and wellbeing variables such as various aspects of burnout (see Örtqvist & Wincent, 2006). However, it has been noted in the literature that the relationship between role stress and nursing engagement has yet to be sufficiently studied (see Garrosa et al., 2011). Garrosa et al., 2011) conclude that Spanish nurses with higher role stress tend to report lower levels of work engagement. Role stress, as an outcome, emerged when the work environment impacts on an individual's ability to fulfill role expectations (Beehr & Glazer, 2005).

As indicated in the opening comments, studies that include PsyCap as a moderator are rare (Avey et al., 2011). In the few published moderation studies, the evidence suggests that PsyCap moderates the relationship between emotional labour and burnout (see Cheung, Tang, & Tang, 2011) and moderates the impact of subjective task complexity on employee performance (Avey et al., 2011). The moderation effect of each component of PsyCap has been established. Sui, Lu and Spector (2007) found support for general self-efficacy as a resource for buffering against stress. In another study, Boudrias et al. (2011) used two sub-scales of PsyCap to operationalize personal resource (resilience and optimism) in the JD-R model. In their study, personal resources were found to moderate the effects of job demands

on distress. Therefore, we expect PsyCap to moderate the relationship between JD and role stress in the present study. We then propose the following hypotheses:

H11. Personal resources (that is, psychological capital attributes) moderates the impact of job demands on role stress such that individuals with higher personal resources will report lower levels of role stress than those with lower personal resources.

H12. Role stress of nurses is negatively associated with their work engagement.

The above hypotheses will be tested using a path model, as depicted in Figure 1. This path model integrates the literature on organizational change, JD-R and PsyCap and will be tested in our investigation of the effects of changes on nursing work engagement.

Insert Figure 1 about here

METHODS

At the end of 2012, there were 338,992 registered practising nurses (including registered, enrolled and midwives) employed in Australia's Australian health care system (Nursing and Midwifery Board of Australia, 2013). An online research company sent an email containing a link to the online survey to their members who matched the occupational and background requirements (such as nurses who were at least 18 years old in age and residing in Australia).

Data collection was undertaken in 2013. The electronic survey consisted of questions regarding demographic characteristics, perceptions of changes to work organization, stressors, job demands and job resources, and job-related attitudes (e.g., job satisfaction and engagement). Ethical approval was obtained from the Human Research Ethics Committee at the administering university.

Overall, 401 useable responses were received equating to a response rate of 30%. Of these, 331 were women. Most of the respondents were full time employees (49.4 percent). The majority were between 26 and 50 years old (62.4 percent). The majority were employed in local government, non-profit and public sector organizations (286 versus 115 in the private sector). An independent t-test was conducted to determine if there was any sectorial difference between public/non-profit and private sector respondents in relation to the variables in the path model. The analysis showed that there was no sectorial difference and they were combined for further analysis.

Preliminary data analyses were conducted using *IBM PAWS 20*. These included reliability, exploratory and confirmatory factor analysis, and correlation analyses. *SmartPLS* 2.0 M3 (Ringle, Wende, & Will, 2005) was used to test the path model. A bootstrapping procedure with 500 sub-samples was carried out to provide extra confidence that the results were not sample-specific. A blindfolding procedure was also undertaken to ensure model stability.

Change Initiatives. As there was no conclusive finding on the types of organizational change initiatives being implemented in the Australian health sector, we adopted the 13 items identified by Loretto et al. (2010) for organizational change in the UK National Health Service. In our study, particpants were asked to think back over the past 12 months about the extent to which they experienced changes in 'training and development', 'support from supervisors', 'work content' (e.g., variety of tasks, administrative aspects of workload), 'peer contact' and 'patient contact'. The items were rated on a 5-point scale, ranging from 1 = 'decreased a lot' to 5 = 'increased a lot'. Several senior nursing practitioners and nursing academics (with doctorate degrees) checked the items for content and face validity. These items were subjected to an exploratory factor analysis. From this analysis two separate factors emerged from the analysis. The first was "changes to the job"

(7 items, composite reliability=0.90). Sample items included ‘changes to the opportunity for training’. The second factor (6 items, composite reliability=0.87) was “changes to work”, including ‘changes to the amount of support, supervision or consultation with senior staff or management and the work of nursing’.

Job Demands. To operationalize job demands, we used six items of Caplan et al’s. (1980) quantitative job overload scale. The items were rated on 7-point Likert scale, such that higher ratings indicated high level of job demands (sample item is, ‘How often does your job require you to work very fast?’). This scale has a composite reliability coefficient of 0.94.

Job Resources. We adopted four items of the job discretion scale from Karasek et al. (1985). The items were rated on a 5-point Likert scale. Sample items included, ‘I have a lot of say about what happens on my job’ and ‘I get to do a variety of things in my job’ (composite reliability=0.88).

Personal Resources. Personal resources were operationalized with the psychological capital scale developed by Luthans, Youssef, and Avolio (2007), comprising four sub-scales: efficacy (e.g., ‘I feel confident analyzing a long-term problem to find a solution’), hope (e.g., ‘If I should find myself in a jam at work, I could think of many ways to get out of it’), resiliency (e.g., ‘I usually manage difficulties one way or another at work’) and optimism (e.g., ‘When things are uncertain for me at work, I usually expect the best’). Following Luthans et al., (2007) a higher order composite factor was created (composite reliability = 0.92).

Role Stress. Consistent with studies on role stress in nursing (Chang & Hancock, 2003; Teo et al., 2013), 7-items from Caplan, Cobb, French, Harrison and Pinneau (1980) were adopted to operationalize role stress (three items for role conflict and four items for role ambiguity). Role ambiguity items were reverse coded because of positively worded questions. Sample items included, ‘Persons equal in rank and authority over you, ask you to

do things which conflict' and 'How often are you clear on what your job responsibilities are?' (composite reliability=0.85).

Work Engagement. Work engagement was operationalized using the 9-item shortened Utrecht Work Engagement Scale (UWES-9) developed by Schaufeli et al. (2006). Instead of the usual three factor solution, exploratory and confirmatory factor analyses resulted in a two factor solution. The first factor consists of the majority of items from "Vigor" scale (Engagement 1, four items) while the second factor consists of items from "Dedication" and "Absorption" scales (Engagement 2, four items). Confirmatory factor analysis using AMOS showed that the two factor model was found to have a much better goodness of fit compared to the original three factor model by Schaufeli et al. (2006). This scale has a composite reliability coefficient of 0.92.

Validity and reliability. To ensure validity and reliability in the partial least squares analysis, we computed composite reliability coefficients, checking for discriminant validity using Fornell and Larcker's (1981) test, and Stone-Geisser Q tests (Chin, 2010). Results of the tests satisfied the minimum guidelines required for PLS analysis (see Chin, 2010). In addition, we conducted the Harmon's single factor test and incorporated a method factor into the path model in order to check for the effect of common method bias (see Podsakoff et al., 2003). Both analyses showed that common method bias is not an issue as demonstrated by the results of the analyses.

RESULTS

Descriptive statistics and intercorrelations are reported in Table 2. As reported in Table 2, nurses experienced two types of changes to nursing work in the previous 12 months. The first type of changes relate to those which have 'increased' in the work environment of nursing. Examples of these changes were 'administrative aspects of nurses' (mean= 3.63, SD=.89) and 'amount of work performed' (mean= 3.59, SD=.98). The second types of

changes, according to the nurses, are those which have 'decreased'. Examples of which included 'opportunities for promotion' (mean= 2.79, SD=.87) and 'amount of support, supervision or consultation with senior staff or management' (mean= 2.97, SD=.87).

Insert Table 2 about here

Results of the path analyses are reported in Table 3. Initially we analysed the path model which did not include the personal resources construct. The path model has a good fit as indicated by the global goodness of fit index proposed by Tenenhaus et al. (2005). After inclusion of the personal resources construct, the goodness of fit increased to 0.48 and the effect size (similar to R-square) of the dependent variable, Engagement, was 0.49.

Insert Table 3 about here

Four hypotheses (H2b, H4, H5 and H6) were not supported. The path from the moderation variable (PsyCap x JD) was also statistically significant with role stress. Moderation analysis was undertaken to examine the influence of PR (PsyCap) on the role stress created by job demands (see Figure 2). In support of H11, nurses reporting high PsyCap buffered the negative effects of job demands on role stress (β=.09, t=1.97, p=0.05).

Insert Figure 2 about here

DISCUSSION AND IMPLICATIONS

This study had two main aims. The first aim was to identify the type and amount of changes implemented in healthcare organizations which have an impact on nursing work. The

second aim was to adopt the JD-R perspective to determine if PsyCap plays a significant role in reducing the negative consequences of changes to nursing work.

Our analysis identified the prevalence of two main clusters of changes to nursing work, 12 months prior to the conduction of the study (that is, mid-2012). These changes were similar to those found in the National Health Service in the UK, as proposed by Loretto et al. (2010) and these were changes to the work environment context and training/support aspects of nursing. They included changes to 'work content' (e.g., variety of tasks, administrative aspects of workload), and 'amount of workload'. The type and amount of changes impacted on nursing work were consistent with the consequences of change initiatives found in Australian healthcare organizations (e.g., Newton et al., 2013). Interestingly, several aspects of nursing work were reported to have decreased in the same period. These included 'opportunities for promotion', 'amount of support, supervision or consultation with senior staff or management', 'opportunities for training' and 'the amount of training I have received'.

Answering the call for more empirical research on the effects of change on employee attitudes, the current study provides support for the application of the JD-R model in understanding the consequences of changes to nursing work in the Australian healthcare sector on work engagement. In doing so this study has several theoretical implications.

Most importantly, new dimensions have been added to the personal resources element of the JD-R model (Xanthopoulou et al., 2007). Specifically they are the incorporation of PsyCap attributes as a personal resource, in ameliorating the negative consequences of a highly stressful work and job environment in healthcare organizations. While Llorens et al. (2006) claimed that the JD-R model is applicable for all types of jobs, the present study has incorporated PsyCap as an element of PR into the model; thus, contributing to the literature on personal resource in JD-R (Xanthopoulou et al., 2007; 2009). In addition, the current study

has incorporated role conflict and role ambiguity aspects of role stress as another antecedent for nurses' work engagement. All these additions to the Bakker and Demerouti's (2007) JD-R model provided new insights into the stressors and strain experienced by an occupational group which has undergone ongoing changes at the job-level. Work engagement, an example of employee attitudes using PP as the foundation (Avey et al., 2010), was shown to have a positive association with job and personal resources, while role stress reduces work engagement.

This study also had two surprising findings. The first relates to the statistically significant path from JD to JR. This finding indicates that when nurses encountered quantitative workloads, they would rely on job resources such as autonomy and discretion to manage the job demands. This finding suggests that the nurses in the sample have high job strain (computed as JD multiplied by JR) as per Karasek's Job Demand-Control typology. Research by Laschinger, Finegan, Shamian and Almost (2001) concluded that nurses with higher levels of job strain were found to exhibit higher work attitudes such as commitment and satisfaction with their work. Hence, the nurses in the current study would be expected to be more engaged as they may experience lower level of role stress and higher level of job satisfaction.

The next surprising finding related to the non-statistically significant relationship from JR to role stress. On further investigation, if the PsyCap construct was excluded from the path model, then JR has a negative association with role stress. When PsyCap was considered, it became the crucial dimension which reduces the role stress experience of nurses. What this finding suggests is that personal resources are crucial in helping stressed nurses deal with the consequences of changes to their work.

Associating with the above finding is the critical role of PsyCap as a source of personal resources. While previous studies have utilised the optimism and efficacy

dimensions of PsyCap as a personal resource (Gillespie et al., 2007; Luthens, Youssef & Avolio, 2007), the present study tested the higher order composite construct of PsyCap and found that PsyCap is a central and important source of personal resources. PsyCap as a higher order composite of hope, optimism, self-efficacy and resiliency, is associated with reduced role stress and enhanced work engagement.

PsyCap was also found to be a moderator. The moderation effect of PsyCap on the relationship between JD and role stress, further contributed to the literature (Boudrias et al., 2011). It suggests that nurses relied on their own personal resources as a means to moderate the negative consequences of job demands. When nurses that have low PsyCap encounter low job demands, they tend to have higher role stress than those with high PsyCap.

Nurses who are hopeful and optimistic, mobilise self-efficacy and resiliency in times of high stress and strain, retain their wellbeing over and above their less psychologically fortunate counterparts. PsyCap generally has been found to be related to enhanced wellbeing, life satisfaction, decreased stress, anxiety and depression. We find that in understanding the peculiarities of nursing stress and organisation change, PsyCap continues to provide benefit, and this is particularly important in advancing wellbeing in the highly stressful occupation of nursing. Thus PsyCap provides a source of personal resource for nurses to aid their ability to deal with the increasing job demands and role stress in their workplace and work environment.

Managerial and Practical Implications

This research has implications for health care organizations planning or undergoing change. Our study suggests that PsyCap is a potentially constructive resource that nurses could deploy in helping them cope with stress and job demands placed on them during change events. Through developing their personal PsyCap, nurses could develop new ways

of engaging with their work and in doing so, create new personal resources. This personal resource could then be an effective response to the job demands and stress during change.

This research also has implications for healthcare managers and leaders who are preparing organizational change initiatives. Managers and leaders who attune themselves to what constitutes PsyCap for nurses are in a position to recognize and anticipate where support might be needed by encouraging and sponsoring activities that enhance PsyCap as part of their change plan. For example, managers might provide activities that help to establish networks in conjunction with change plans. By establishing such networks, managers can enable the intentional facilitation of PsyCap that will help nurses cope with the additional stress and demands of change and maintain engagement during and after a change program.

CONCLUSIONS

This study provides an identification of the prevalence of a range of changes which have been implemented in healthcare organizations. In addition, the incorporation of PsyCap attributes and provided evidence-based, empirical support for the utility of the JD-R model in explaining the relationship between change, role stress and work engagement was also identified.

Limitations and future research implications

While the current study has undertaken several checks to ensure common method bias (Podsakoff et al., 2003) is not of major concern, there are some potential limitations and implications for future research. This study was cross-sectional and respondents' mood states and dispositional variables could make results related to stress difficult to interpret (see Podsakoff et al., 2003). Future research should collect longitudinal data to better understand the causal effects of change → stressors → employee attitude relationships across at least three different time points (e.g., Time 1 engagement could subsequently lead to to stress and strain in subsequent time periods). Multi-wave data could also be collected from supervisors

on objective assessment of employees' work engagement attitudes. These two designs would specifically incorporate temporal effect of change into the research (Kelloway & Francis, 2013). Even though this study addresses questions considered to be important such as untangling the antecedents, attributes and outcomes of work engagement (Bargagliotti, 2012), future research should include other types of personal resources such as emotional intelligence as a buffer of stress (Gorgens-Ekermans & Brand, 2012).

Furthermore, our research was conducted in accordance with other similar studies of Australia and New Zealand (Chang & Hancock, 2003; Teo et al., 2013) which operationalized role stress as two dimensions (role conflict and role ambiguity), meta-analytic review showed that role overload should also be included (Örtqvist & Wincent, 2006). This is something that reseaerchers undertaking follow-up studies should consider.

In summary, our findings contribute to the positive psychology literature by showing how role stress resulting from changes to work context and job design could be reduced by not just seeking job resources, but also by activating psychological attributes. In comparison to previous studies, we introduced personal resources as a moderator when investigating the harmful effects of role stress and work engagement.

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Table 1. Descriptive Statistics and Intercorrelations

	M	SD	AVE	1	2	3	4	5	6	7	8
1. Org type (Public/Non-profit vs Private)	-	-	-	1.00							
2. T&S Changes	2.98	0.66	.60	-.04	1.00						
3. Work Changes	3.46	0.65	.52	.02	.34***	1.00					
4. Job Demands	3.73	0.92	.79	.02	-.01	.45***	1.00				
5. Job Resources	3.64	0.79	.65	.12*	.20***	.46***	.44***	1.00			
6. Personal Resources (PsyCap)	3.38	0.58	.73	-.03	.33***	.26***	.16***	.50***	1.00		
7. Role Stress	3.24	1.09	.50	.11*	-.08	.08	.10*	.09	-.34***	1.00	
8. Work Engagement	4.57	1.17	.85	-.07	.30***	.28***	.20***	.45***	.63***	-.29***	1.00

N=401
AVE=average variance estimates
**p<.01; **p<.01; ***p<.001

Table 2. Factor Loadings for Changes to Nursing Work

Thinking back over the past 12 months, how have the following aspects of your job changed:	Factor: Work Env Loading	Factor: T&S Loading
1. Administrative aspects of my workload	.74	
2. The amount of work I do	.70	
3. The variety of tasks involved in my job	.69	
4. Contact with and use of computing technology	.67	
5. Amount of contact with patients	.64	
6. Quality of contact with patients	.44	
7. Opportunities for promotion		.82
8. Amount of support, supervision or consultation with senior staff or management		.78
9. Opportunities for training		.77
10. The amount of training I have received		.73
11. The security of my job		.61
12. Contact with my union or staff association		.57
13. The number of people I work with on a day-to-day basis		.50

Note: The items were rated on a 5-point scale, ranging from 1 = ‘decreased a lot’ to 5 = ‘increased a lot’

Table 3. Results of Path Analysis

Paths	Coefficient	t-statistic	p-value
H1a. Increasing Changes to Work Env → JD	.53	13.65	***
H2a. Increasing Changes to Work Env → JR	.26	5.28	***
H1b. Decreasing changes to T&S → JD	-.15	2.55	**
H2b. Decreasing changes to T&S → JR	.02	.50	ns
H3. JD → JR	.28	4.81	***
H4. JD → Role Stress	.02	.32	n.s.
H5. JD → Engagement	.03	.58	n.s.
H6. JR → Role Stress	-.06	1.04	n.s.
H7. JR → Engagement	.22	4.08	***
H8. Personal Resources → Role Stress	-.45	8.83	***
H9. Personal Resources → Engagement	.48	10.19	***
H10. Personal Resources → JR	.28	6.00	***
H11. Personal Resources * JD → Role Stress	.14	2.30	*
H12. Role Stress → Engagement	-.15	2.65	**

N=401
Work Env: Work environment factor (ranging from 1 = ‘decreased a lot’ to 5 = ‘increased a lot’)
T&S: Training and support factor (ranging from 1 = ‘decreased a lot’ to 5 = ‘increased a lot’)
n.s. not significant
*p<.05; **p<.01; ***p<.001

Figure 1. Proposed Research Model

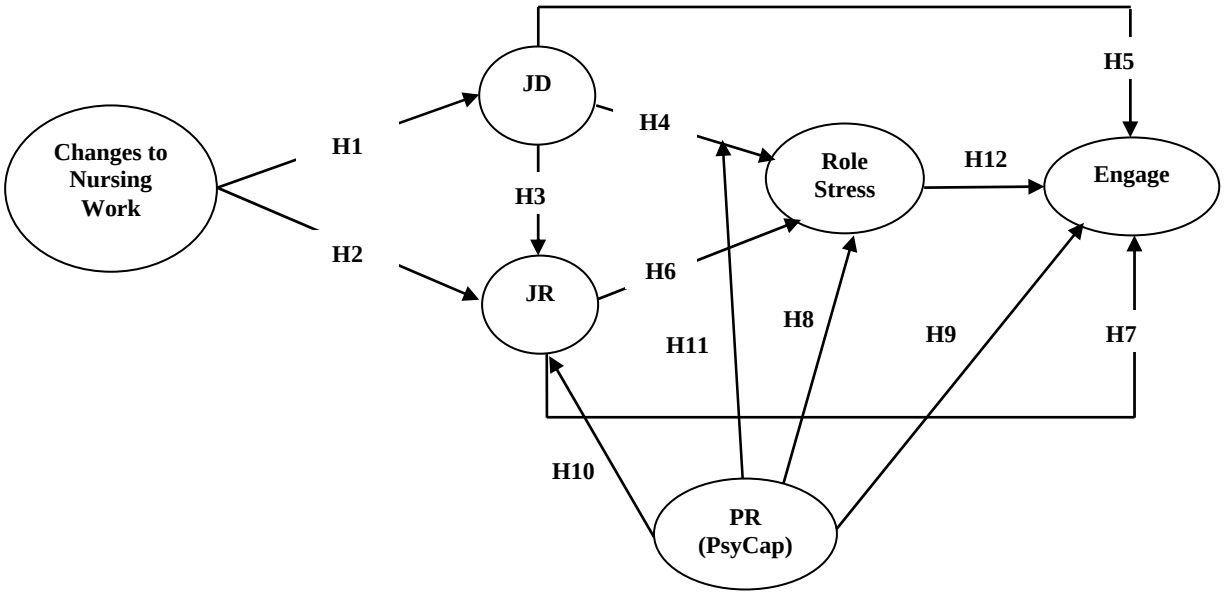

Figure 2. Two-way interaction of job demands and psychological capital on role stress